

WHAT IS CLAIMED IS:

1. A metal/ceramic bonding substrate comprising:
a ceramic substrate;
a metal circuit plate bonded to one side of said ceramic substrate;
a heat sink member, one side of which is bonded to the other side of said ceramic substrate; and
a work-hardened layer formed on the other side of said heat sink member.
2. A metal/ceramic bonding substrate as set forth in claim 1, wherein said work-hardened layer is formed by work-hardening a surface of said heat sink member by shot peening.
3. A metal/ceramic bonding substrate as set forth in claim 1, wherein a warpage of the other side of said heat sink member is -200 micrometers or more, assuming that said warpage is a difference in height between a center and edge of the other side of said heat sink member and is positive (+) when the other side of said heat sink member warps so as to be convex and negative (-) when the other side of said heat sink member warps so as to be concave.
4. A metal/ceramic bonding substrate as set forth in claim 1, wherein a warpage of the other side of said heat sink member is in the range of from -100 to +500 micrometers, assuming that said warpage is a difference in height between a center and edge of the other side of said heat sink member and is positive (+) when the other side of said heat sink member warps so as to be convex and negative (-) when the other side of said heat sink member warps so as to be concave.
5. A metal/ceramic bonding substrate as set forth in claim 1, wherein a warpage of the other side of said

heat sink member is in the range of from 0 to +200 micrometers, assuming that said warpage is a difference in height between a center and edge of the other side of said heat sink member and is positive (+) when the other side of said heat sink member warps so as to be convex and negative (-) when the other side of said heat sink member warps so as to be concave.

6. A metal/ceramic bonding substrate as set forth in claim 1, wherein said metal circuit plate and said heat sink member contact said ceramic substrate to be bonded directly to said ceramic substrate.

7. A power module comprising:
a metal/ceramic bonding substrate as set forth in claim 1; and
a semiconductor chip soldered on said metal circuit plate of said metal/ceramic bonding substrate.

8. A method for producing a metal/ceramic bonding substrate, said method comprising the steps of:
bonding a metal circuit plate to one side of a ceramic substrate;
bonding one side of a heat sink member to the other side of said ceramic substrate; and
forming a work-hardened layer on the other side of said heat sink member.

9. A method for producing a metal/ceramic bonding substrate as set forth in claim 8, wherein said work-hardened layer is formed by a shot peening method.